



Santa Ana  
Unified School District

# SAUSD: Data Dashboards

## Supporting Student Success Through The Use of Early Warning Indicators

*25th Annual Management Information Systems  
(MIS) Conference*

**February 15-17, 2012**

Sheraton San Diego Hotel & Marina • San Diego, California

***SERVER'S UP, DUDE!***

Date: 2/15/12

Time: 3:00-4:00 PM

Location: Marina IV



## Introduction of Santa Ana Team:

- Alexandra Ito, Director of Education Technology
- Mobashir Mohammad, Assistant Director of Technology
- Lisa McNicholas and Peter Desimini, eScholar
- Chris Hughes, Oracle



## **Presentation Overview**

- **ARRA/EETT Grant Summary**
- **Data Warehouse Infrastructure**
- **Student Success Metrics**
- **Analytics Reports and Dashboard**
- **Next Steps: Cloud Reports for Students**



## American Recovery and Reinvestment Act (ARRA)

## Enhancing Education Through Technology (EETT)

## Data Systems to Support Student Success

### **SAUSD Project Arrow**

*Using predictive data in support of student success in graduation, college and career readiness*

**Student  
Success**



## ARRA EETT Competitive Grant Requirements

### Data System Focus

- Data system development to analyze data/graduation, college and career readiness
- Ability to disaggregate data and produce individualized reports

### Professional Development

- Teacher/administrator use of data in support of graduation rate and college, career readiness

### Community and Partners

- Input by community and partners in decision-making, input from colleges and partners for college and career readiness

### Program Evaluation and Sustainability

- External evaluator
- Program sustained through funding and knowledge transfer
- Program replication on a statewide basis





# Early Warning Systems: Setting the Stage

**Some indicators are usually strong predictors**

“In the high-poverty districts, we have not found one district where **grades, credits, and attendance** are not highly predictive...”

Johns Hopkins University.

Chicago Public Schools’ **graduates and dropouts were accurately identified 80 percent of the time** using an “on-track” indicator.

San Jose Unified School District – **one of the highest Graduation rates in the nation** for Urban Districts – their district-wide early warning system is attributed with being a significant factor in increased graduation rate.

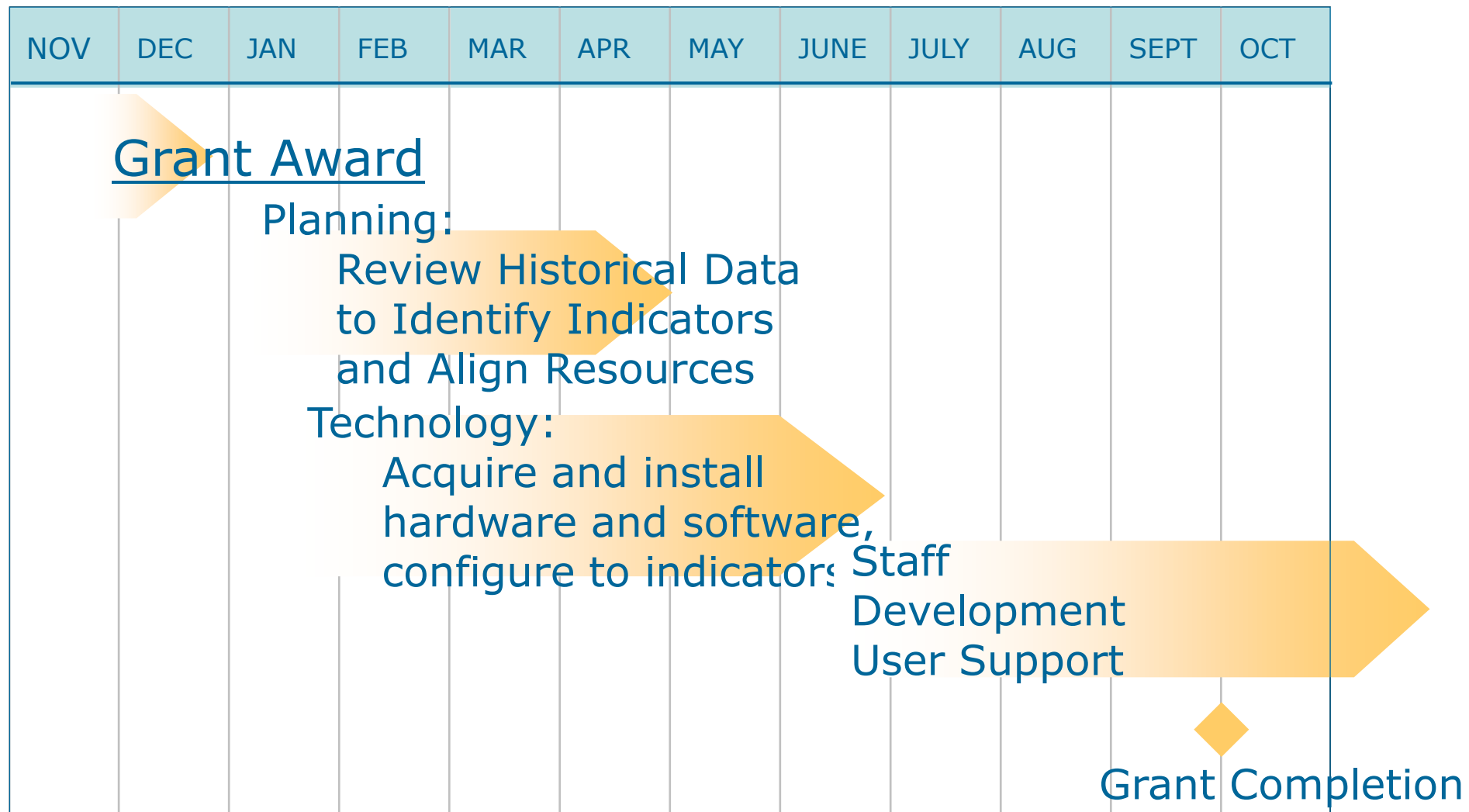


## Using Early-Warning Indicators to Help Every Student Succeed

- Early-warning systems consist of **actionable data in an easy-to-access dashboard interface.**
- They provide data that can align students with **specific interventions.**
- Can be used to **assess the effectiveness of strategies** in a timely manner.
- Provides a way to **demonstrate whether an entire school is on track** to improving graduation rates.



## ARRA/EETT Grant Implementation







## Student-Centric Data Technology

- Applying Analytic Technology to Enterprise Data

### Data Warehouse Infrastructure

#### Student Success Metrics

Establish data dictionary

Identify Metrics

Establish Indicators

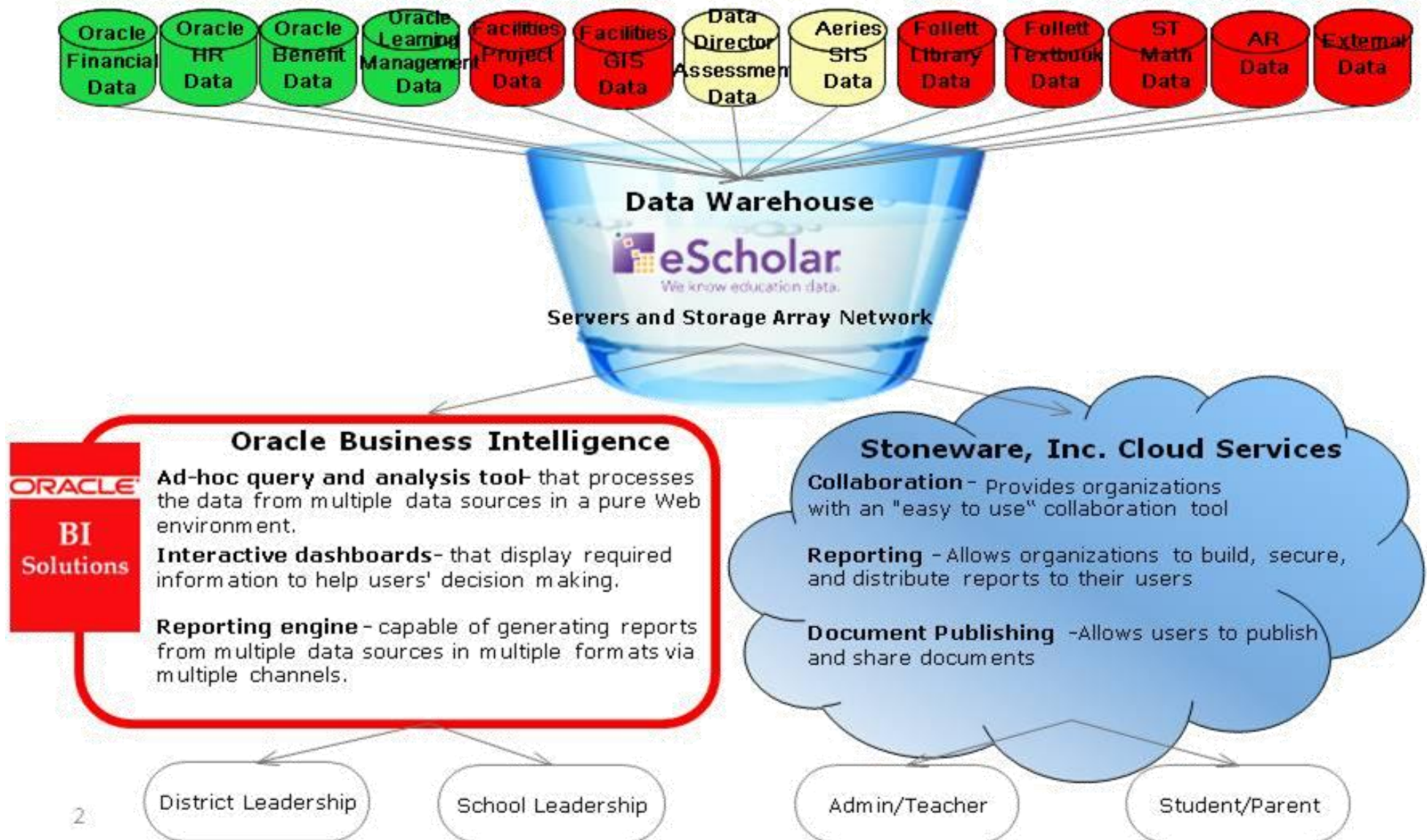
Analytics Reports & Dashboard



**Student  
Success**



## SAUSD Data Diagram





## Data Warehouse Infrastructure: Software

### Oracle Database



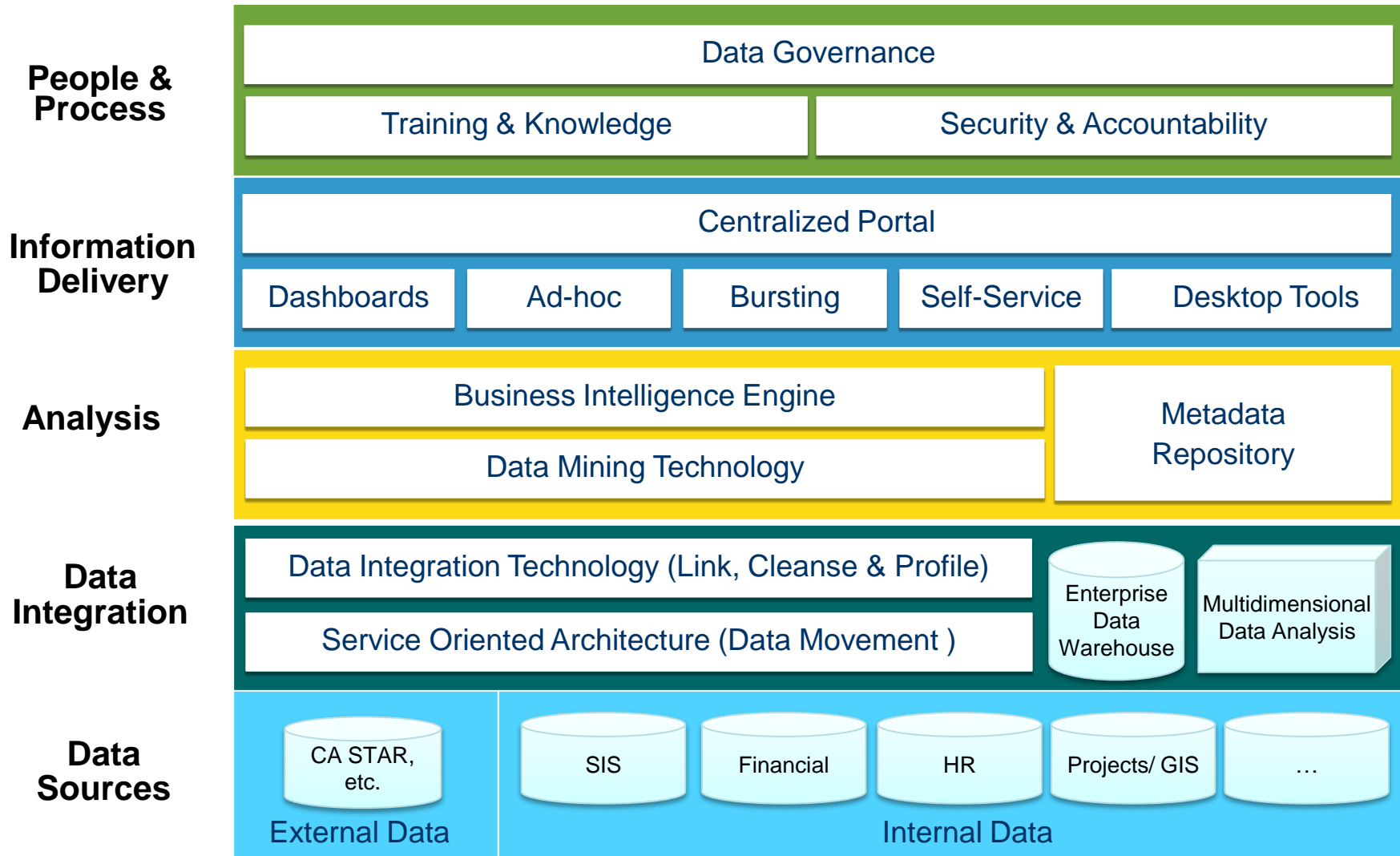
11g Database

**ORACLE'**

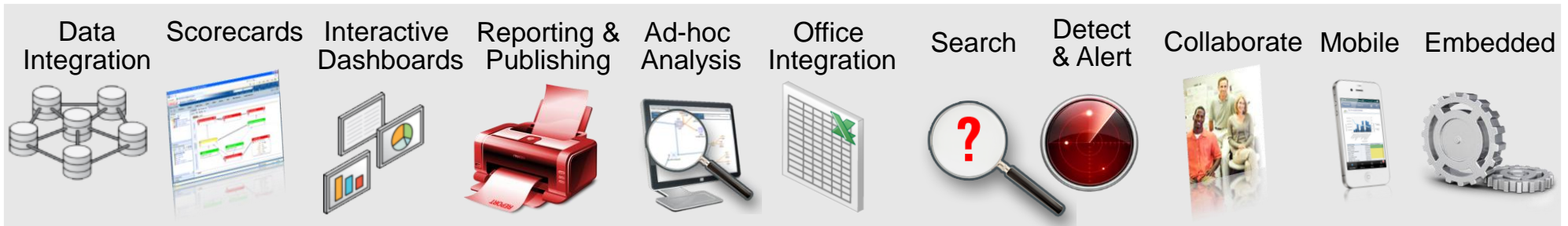
- Extreme performance
- Lower costs
- Open – Standards-based
- Secure
- Simplified enterprise architecture



## Data Warehousing & Business Intelligence Framework

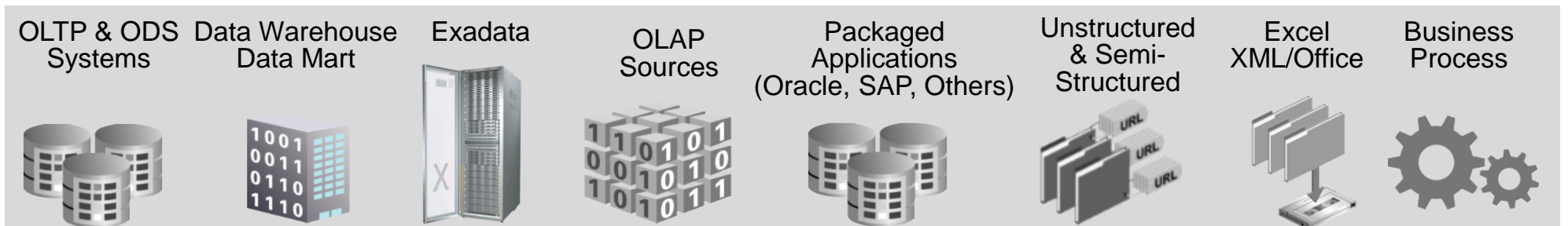






## Common Enterprise Information Model

- Common Metadata Foundation across all Data Sources
- Common Security, Access Control, Authorization, Auditing
- Common Request Generation and Optimized Data Access Services
- Common Clustering, Workload Management, & Deployment
- Common Systems & Operational Lifecycle Management

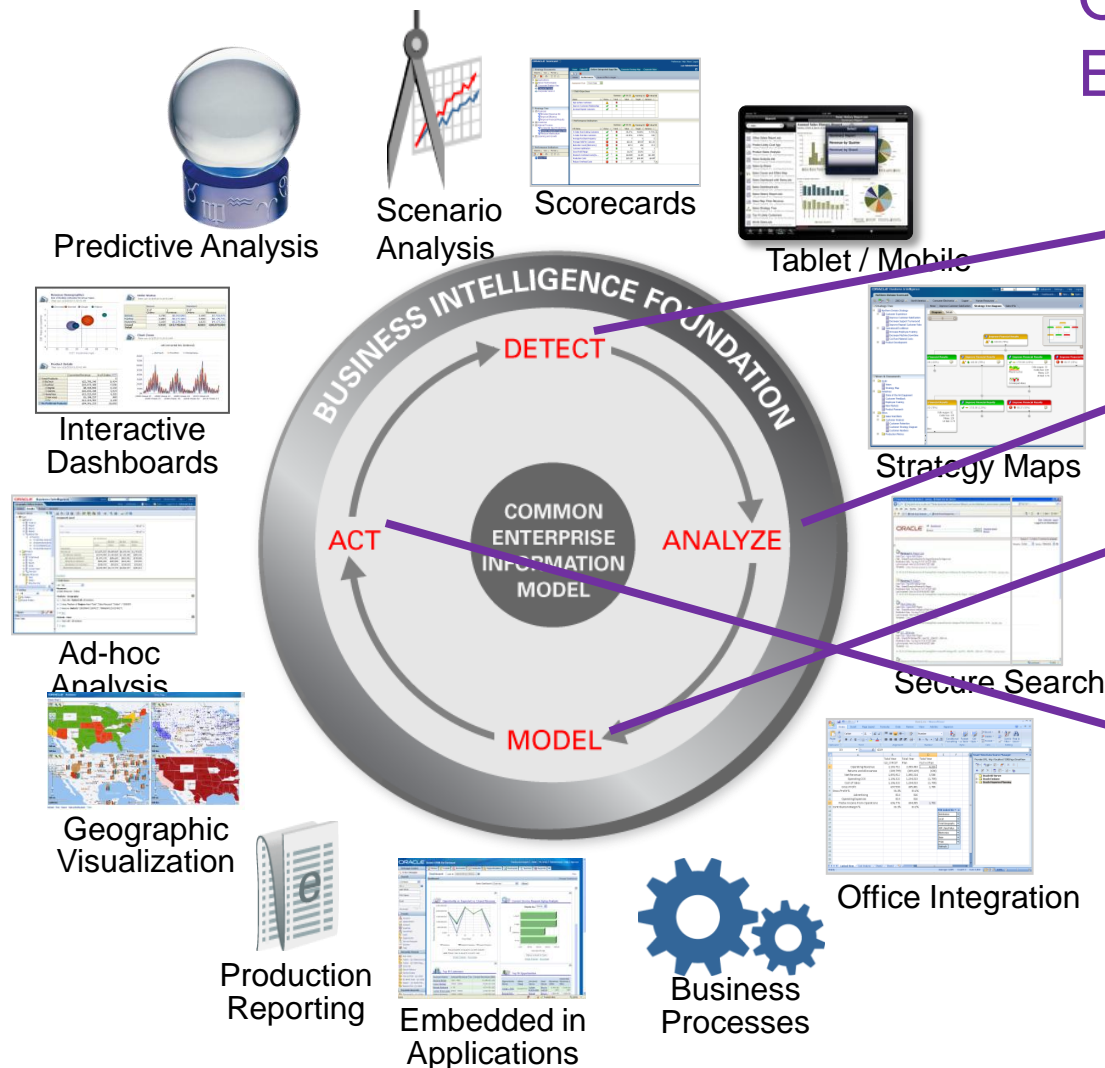




## Data Warehouse Infrastructure: Analytics

**ORACLE**

Oracle Business Intelligence  
Enterprise Edition



What happened?

Why did it happen?

How to Optimize  
Across Alternatives?

Take Action - Who Does  
What?





## Data Warehouse Infrastructure: Schema



- The eScholar Complete Data Warehouse® for PK-12 is a comprehensive software product which enables state and local education agencies to gather, integrate and manage key education-related data from a wide variety of operational systems and data sources.



## Data Warehouse Infrastructure: Reporting



- Stoneware's webNetwork 6 is a software solution that allows organizations to deploy their own private and hybrid clouds. webNetwork is installed inside of the data center on servers and creates a secure cloud that provides users with access to data center applications and resources through a desktop built in a browser.



## Student-Centric Data Technology

- Applying Analytic Technology to Enterprise Data

Data Warehouse Infrastructure

### Student Success Metrics

Establish data dictionary

Identify Metrics

Establish Indicators

Analytics Reports & Dashboard

**Student  
Success**



## There are a multitude of complicating issues:

- Complexity of cataloging all data fields
- Complexity of authorization: the “Who sees what?”
- Complexity of access: the “How do I see what?”
- Regulatory issues
- Data security
- Data accuracy issues
- Confusing concepts and vocabulary



## Phase 1 – Graduation Indicators (Spring-Summer 2011)

- 1<sup>st</sup> Data Interview: provide data to establish data dictionary, identify existing analytics (March 12)
- Bi-weekly Monday morning meetings
- Identify Metrics (ESBOCES live demo, April 27)
- 2<sup>nd</sup> Data Interview (week of May 2)
- Finalization of graduation EWI's by 7/31

## Phase 2 (Fall-Winter)

- Verifying Data
- Professional Development
- Intervention Alignment
- Expanding to Intermediate School

## Phase 3 (Spring-Summer)

- College and Career Indicators
- K-12 Focus
- Student Dashboard



## Student Success Metrics

Overall Indicator view shows total combined score of all Early Warning Indicators for a student

Total graduation readiness score is made up of five indicators:

1. 35% of score – Attendance
2. 20% of score – Assessments
3. 20% of score – Academics
4. 15% of score – Discipline
5. 10% of score – Mobility





## Attendance Indicator – 35%

Weight	Sub-Indicator
30%	Attendance rate (days present) < 95% for the current year
30%	3 or more days absent in the current year Excused & Unexcused absences combined <b>-OR-</b> 3 or more tardies in the current year
20%	3 or more consecutive days absent in the current year
20%	10 or more days absent in the current year



## Assessments Indicator – 20%

Weight	Sub-Indicator
30%	9 <sup>th</sup> grade indicator: Failing mock CAHSEE score -OR- 10 <sup>th</sup> grade (+) indicator: Failing CAHSEE score
40%	CELDT: deviations in proficiency (past 5 years) <ul style="list-style-type: none"><li>• EL student with 9+ years in an EL program, with a CELDT score or Advanced or Early Advanced, and Reading and Writing Subsections 2 levels below overall score.</li><li>• EL student with 9+ years in an EL program, with a CELDT overall score of Intermediate, and Reading and Writing subsections below Intermediate.</li></ul>
30%	CST deviations in proficiency: assessment score or proficiency level tracked over the past 3-5 years.



## Academics Indicator – 20%

Weight	Sub-Indicator
40%	GPA < 2.4: based on 6 week progress reports
30%	1 or more courses failed in the current year  <b>-OR-</b>  Any course grade “F” or “D”
30%	Student did not pass both semesters of Algebra: List of Algebra classes provided as supplement*  <b>-OR-</b>  Core course failed in the current year: List of core courses provided as a supplement*



## Discipline Indicator – 15%

Weight	Sub-Indicator
40%	3 or more serious infractions for the current year
60%	Specific types of infractions



## Mobility Indicator – 10%

Weight	Sub-Indicator
100%	3 or more moves or enrollments during the current school year



## Student-Centric Data Technology

- Applying Analytic Technology to Enterprise Data

Data Warehouse Infrastructure

Student Success Metrics

### **Analytics Reports & Dashboard**

**Professional Development**

**Use Analytic Reports**

**Align Resources, Interventions**

**Assess Progress**

**Student  
Success**





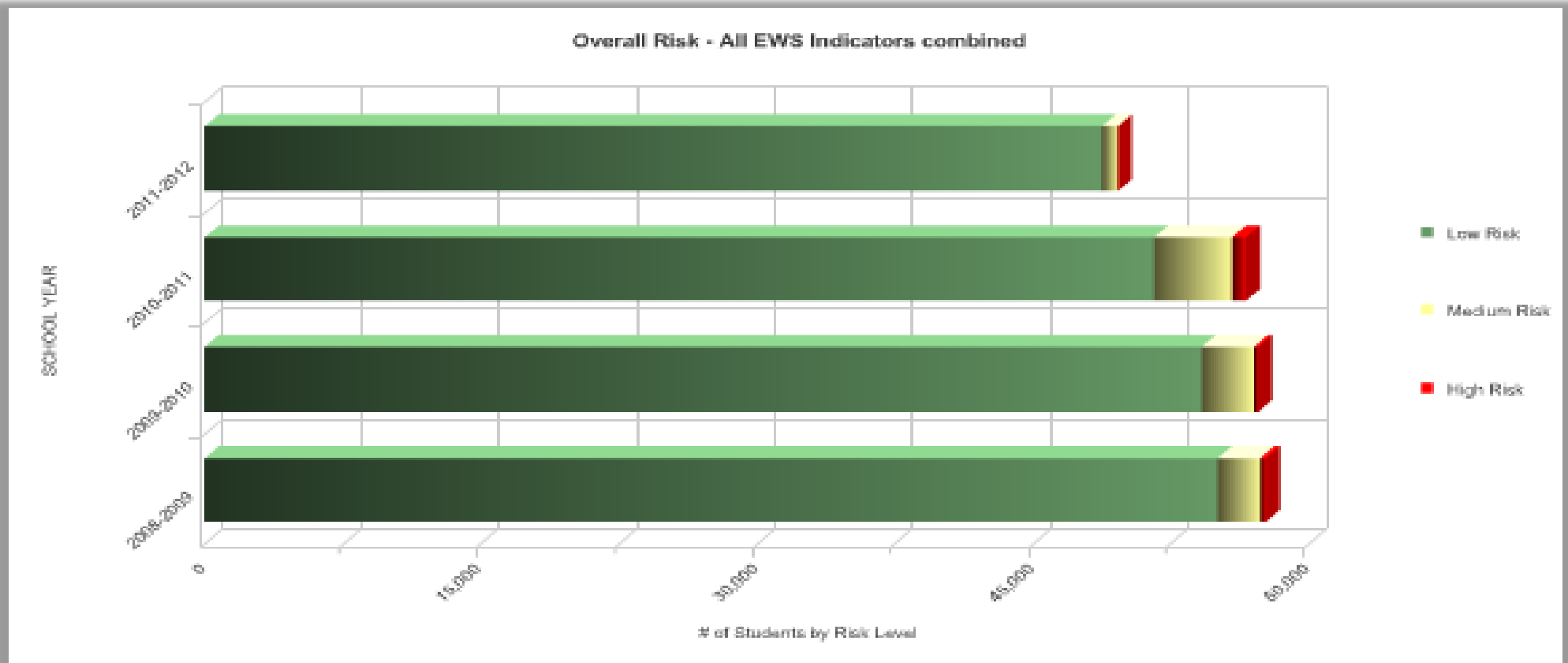
<b>Introduction:</b> Data warehousing concepts and providing input on early warning system predictors	<b>Administrators &amp; core team from all sites</b>
<b>Train the Trainer:</b> Training for the designated <b>school expert</b> , who will understand the basics of the data warehouse, the source systems that supply the data, the early warning system predictors, and current research.	<b>School designee, district designee</b>
<b>Interpreting Reports to Drive Instructional Decisions.</b> Review Early Warning indicators and apply the use of these measurements to current student data.	<b>Administrators &amp; core team from all sites</b>
<b>Mechanics of Reporting:</b> School site training on accessing reports; navigating through the reports system; running reports on current students.	<b>Administrators &amp; core team from all sites</b>
<b>On-site, job imbedded training:</b> School visits to target individual skills, extend learning and support widespread, masterful use of the data.	<b>Administrators &amp; core team from all sites</b>
<b>Enrollment to eScholar U:</b> (online learning resource)	<b>Administrators &amp; core team from all sites</b>



## Overall Report

The overall report data is shown by years in the bar graph. The graphs are interactive & will filter the student list (below)

1. 35% of score – Attendance
2. 20% of score – Assessments
3. 20% of score – Academics
4. 15% of score – Discipline
5. 10% of score – Mobility





## Overall Reports

REPORT SCHOOL YEAR	STUDENT ID	STUDENT NAME	High Risk	Medium Risk	Low Risk	ATTENDANCE INDICATOR	ASSESSMENT INDICATOR	ACADEMICS INDICATOR	DISCIPLINE INDICATOR	MOBILITY INDICATOR	Overall EWS Indicator Score
	3706		1	0	0	95.00%	92.00%	93.00%	94.00%	96.00%	94.00%
	3521		1	0	0	95.00%	92.00%	93.00%	94.00%	96.00%	94.00%
	3577					95.00%	92.00%			96.00%	94.00%
	3588					95.00%	92.00%			96.00%	94.00%
	3577					95.00%	92.00%			96.00%	94.00%
	3579					95.00%	92.00%			96.00%	94.00%

Student IDs are active links so users can drill down into the details of each student's demographics

Student EWS Scores are active links so users can drill down into the details of each student's indicators.

CURR_GRADE_LVL	STUDENT_GENDER	STUDENT	YEAR	LEP_ELIGIBIL_CO
2	M		6/7/2012 12:00:00 AM	L
	Male			

### Discipline Infraction Details

SCHOOL YEAR	STUDENT ID	STUDENT NAME	Discipline Infraction Code	Infraction Description	# of Infractions	SEVERITY	Infraction Response Code	Infraction Response	Intervention Description	Intervention	Available to School
2011-2012	380348			Bullying	3	3	N/A	N/A	N/A	Click Here for List	

### Mobility- School Enrollment Details

SCHOOL YEAR	STUDENT ID	STUDENT NAME	RESIDENCE_DISTRICT	GRADE LEVEL	ENROLL CODE	Enroll Start Date	ENTRY ENROLL COMMENT	EXIT ENROLL CODE	Enroll End Date	EXIT ENROLL COMMENT	STUDENT MOVES	# of Enrollments = 1	# of Enrollments = 2	# of Enrollments >= 3	MOBILITY INDICATOR TOTAL
2011-2012				3	440	08/24/2011		440	08/25/2011	Program or Grade Change	3	0	0	1	100.00%
						08/26/2011		440	08/29/2011	Program or Grade Change	3	0	0	1	100.00%
				E		08/30/2011	Enrolled				3	0	0	1	100.00%

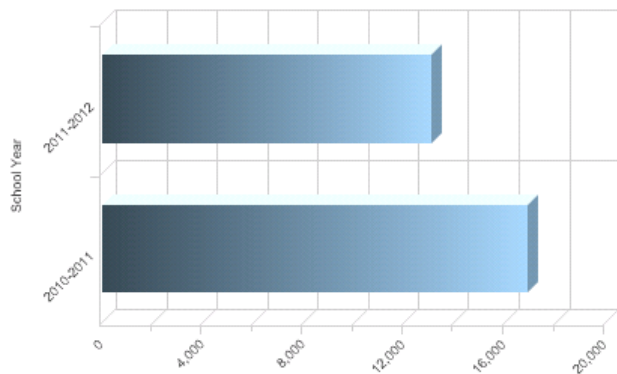


# Attendance Reports & Dashboard

School Year	School	School Type	Guidance Counselor	Grade Level	Multi-Grade Level	Student ID	Student Name (LName, FName)	Go
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Go"/>

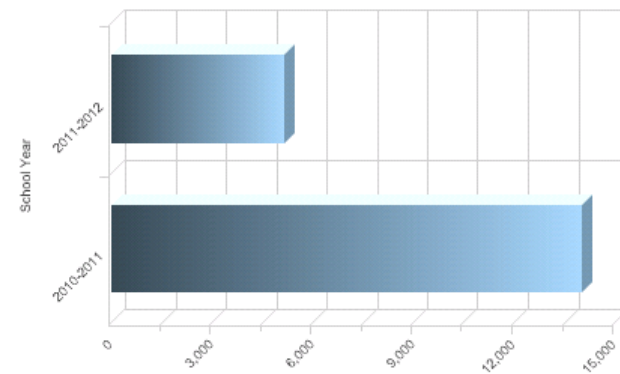
Please see bottom of dashboard for explanation of Attendance Indicators 1 - 4.

Indicator 1 - # of Students with attendance Rate < 95%



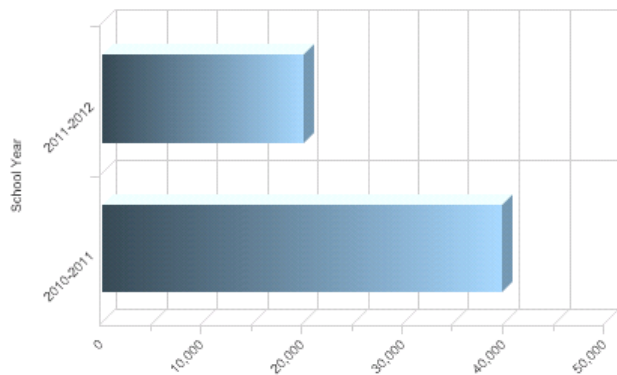
Indicator 1 - Students with <95% Attendance Rate

Indicator 3 - # of Students with 3 or more Consecutive Absences



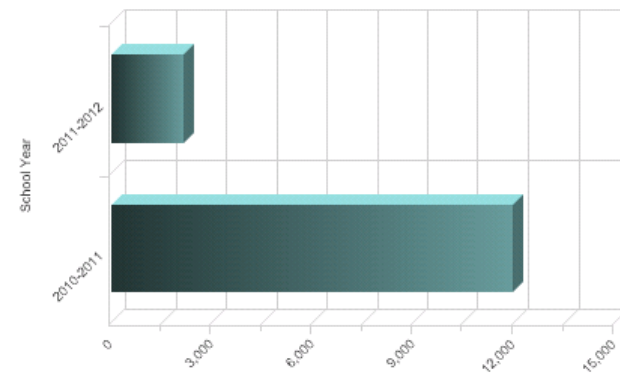
# of Students with 3 or more Consecutive Absences

Indicator 2 - # of Students with Days Absent OR Days Tardy >= 3



Indicator 2 - Days Absent OR Days Tardy >= 3

Indicator 4 - # of Students with Days Absent >= 10



# of Students with 10 or more absences

School Year	Student ID	Student Name	Attendance Start Date	Attendance End Date	Grade Level	Days Enrolled	Days Absent	Days Present	Days Unexcused Absence	Days Tardy	Attendance Rate	Indicator 1 - Attendance Rate < 95%	Indicator 2 - Days Absent OR Days Tardy >= 3	Indicator 3 - Consecutive Days Absent >= 3	Indicator 4 - Days Absent >= 10	Attendance Indicator Total
2011-2012			08/24/2011	12/16/2011	1	75	10	65	7	19	86.67%	1	1		1	100.00%
2011-2012			08/24/2011	01/06/2012	1	75	10	65	0	0	86.67%	1	1		1	100.00%
2011-2012			08/24/2011	01/06/2012	1	75	10	65	0	0	86.67%	1	1		1	100.00%
2011-2012			08/24/2011	01/06/2012	1	75	10	65	0	0	86.67%	1	1		1	100.00%



## Assessment Reports

SCHOOL YEAR	STUDENT ID	STUDENT NAME	Test Description	Test Version	Item Description	STATUS	SCALE SCORE	NUMERIC SCORE	Reporting Score	Standard Achieved Code	STANDARD_ACHIEVED	CAHSEE - Sub-Indicator 1 - Criteria met	CELDT - Sub-Indicator 2 - Criteria Met	CST - Sub-Indicator 3 - Criteria Met	HIGH RISK	MEDIUM RISK	Total Assessment Indicator Score
2008-2009	1027		CAHSEE	CAHSEE 2008-2009	English 10 N/A N/A March		0	0 0		N/A	NA	Y	N	Y	1	0	100.00%
			CAHSEE		Mathematics 10 N/A N/A March			0 0		N/A	NA				1	0	100.00%
			CAHSEE		Written Essay 10 N/A N/A March			0 0		NA	NA				1	0	100.00%
	1040		CAHSEE	CAHSEE 2008-2009	English 10 N/A N/A March			275 275		9	NA				1	0	100.00%
			CAHSEE		English 10 N/A N/A May			285 285		1	NA				1	0	100.00%
			CAHSEE		Mathematics 10 N/A N/A May			295 295		9	NA				1	0	100.00%
			CAHSEE		Mathematics 10 N/A N/A May			288 288		9	NA				1	0	100.00%
			CAHSEE		Written Essay 10 N/A N/A May			0 0		NA	NA				1	0	100.00%
			CAHSEE		Written Essay 12 N/A N/A May		1	1 1		NA	NA	Y	N	Y	1	0	100.00%
	1047		CAHSEE	CAHSEE 2008-2009	English 12 N/A N/A November	1	282	282 282		1	NA	Y	N	Y	1	0	100.00%
			CAHSEE		Mathematics 12 N/A N/A November	1	312	312 312		1	NA	Y	N	Y	1	0	100.00%
			CAHSEE		Written Essay 12 N/A N/A November	N/A	1	1 1		NA	NA	Y	N	Y	1	0	100.00%
	1100		CAHSEE		English 12 N/A N/A March	9	351	351 351		2	NA	Y	N	Y	0	1	70.00%
							333	333 333		1	NA	Y	N	Y	0	1	70.00%
							2	2 2		NA	NA	Y	N	Y	1	0	100.00%
							279	279 279		1	NA	Y	N	Y	1	0	100.00%
	1116		CAHSEE		English 12 N/A N/A March	9	311	311 311		1	NA	Y	N	Y	1	0	100.00%
							0	0 0		NA	NA	Y	N	Y	1	0	100.00%
							331	331 331		9	NA	Y	N	Y	0	1	70.00%

Status:  
shown on a  
chart

Y or N Indicators  
on Assessments

Test Description:  
CAHSEE, CELDT or  
CST





## Academics Dashboard

Data Warehouse SIS - Early Warning System - Overall

EWS - Mobility Indicator

EWS - Discipline Indicator

EWS - Attendance Indicator

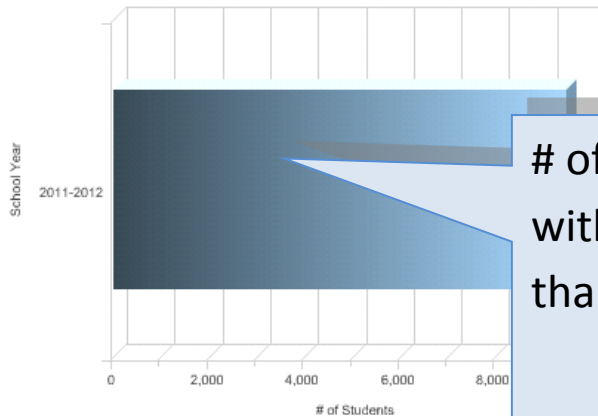
**EWS - Academics Indicator**

Page Options ▾

School Year:  School Type:  School Name:  Grade Level:  Student ID:  Student Name:  Course ID:  Course Name:

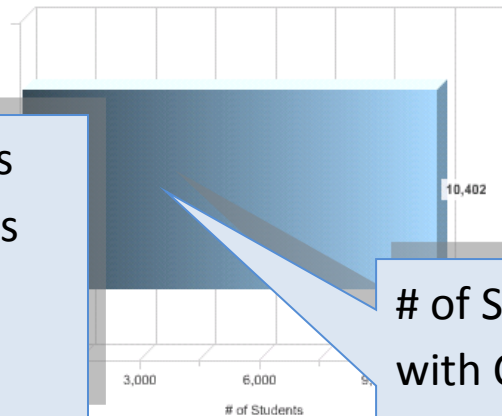
### Academics Indicator Report

Indicator 1 - Students with GPA < 2.4



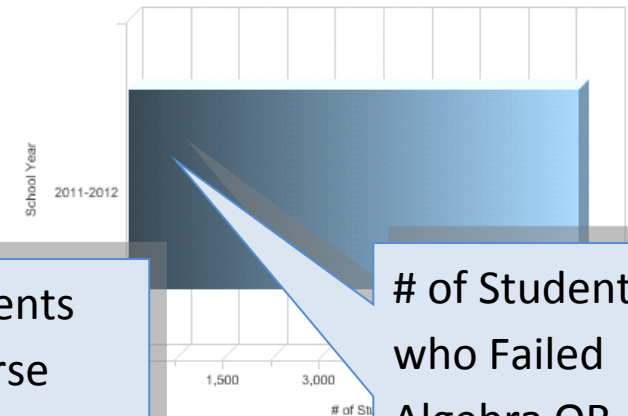
# of Students  
with GPA less  
than 2.4

Indicator 2 - Students with Course Grade = D or F



# of Students  
with Course  
Failed—OR D  
or F Grade

Indicator 3 - Students Failing a Core Course



# of Students  
who Failed  
Algebra OR  
Failed a Core  
Course

School Year	School Name	Student ID	Student Name	Grade	Indicator 3 - Core Course Failed	GPA < 2.4	Academics Indicator
2011-2012	Seegerstrom High School			11	1	1	
2011-2012	Santa Ana High School			12	1	1	
2011-2012	Santa Ana High School			12	1	1	
2011-2012	Valley High School			11	1	1	





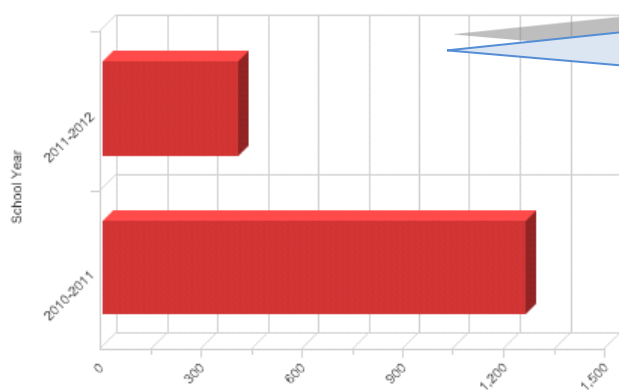
# Discipline Reports & Dashboard

[Data Warehouse SIS - Early Warning System - Overall](#)
[EWS - Mobility Indicator](#)
[EWS - Discipline Indicator](#)
[EWS - Attendance Indicator](#)
[EWS - Academics Indicator](#)
[Page Options](#)

School Year	School	School Type	Guidance Counselor	Grade Level	Multi-Grade Level	Student ID	Student Name (LName, FName)	Go
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="button" value="Go"/>

Please see bottom of dashboard for explanation of Discipline Indicators 1 & 2.

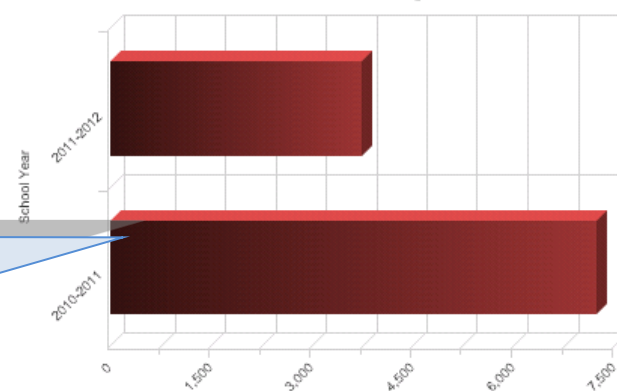
# of Students with 3 or more SERIOUS Infractions



# of Students with 3 or more SERIOUS Infractions

# of Students with specific infractions identified by SAUSD

# of Students with Severe or Matching Infraction Codes on List



Met Indicator 1 Criteria - Students with >=3 Discipline Infractions

Met Indicator 2 Criteria - Students with Discipline Infractions(Severe or On List)

School Year	Student ID	Student Name	Grade Level	Total Number of Infractions	# of Serious Infractions	NEW - Met Indicator 1 Criteria	NEW - Met Indicator 2 Criteria	Discipline Indicator Total
2011-2012			7	57	15	True	True	100.00%
2011-2012			10	22	13	True	True	100.00%
2011-2012			10	18	12	True	True	100.00%



## Discipline Reports & Dashboard - drilldown

### Discipline Indicator Drill Down Report

School Year	School	Student ID	Student Name	Infraction ID	Infraction Date	Infraction Code	Infraction Description	Infraction Comment	Infraction Severity
2011-2012	Valley High School			98413	10/14/2011	04	*Hostile/Intimidating Environment EC48900.4	Student caused a disturbance in class that became violent, and...	A
	Valley High School			87690	09/12/2011	04			A
	Valley High School			118831	12/15/2011	KA	*Insubordination/Defiance EC48900(k)		A
2010-2011	Godinez Fundamental High School			50785	03/07/2011		*Hostile/Intimidating Environment EC48900.4		A
	Godinez Fundamental High School			11038	09/22/2010	BD	*Possess Knife/Sharp Object w/o Brandishing EC48900(b)		A
	Godinez Fundamental High School			59801	03/28/2011	KC	Classroom Disruption/Incident EC48900(k)		A
	Godinez Fundamental High School			50549	03/07/2011	KC			A

Results

Discipline Infractions & codes defined by SAUSD.



## Mobility Reports & Dashboard

Data Warehouse SIS - Early Warning System - Overall

**EWS - Mobility Indicator**

EWS - Discipline Indicator

EWS - Attendance Indicator

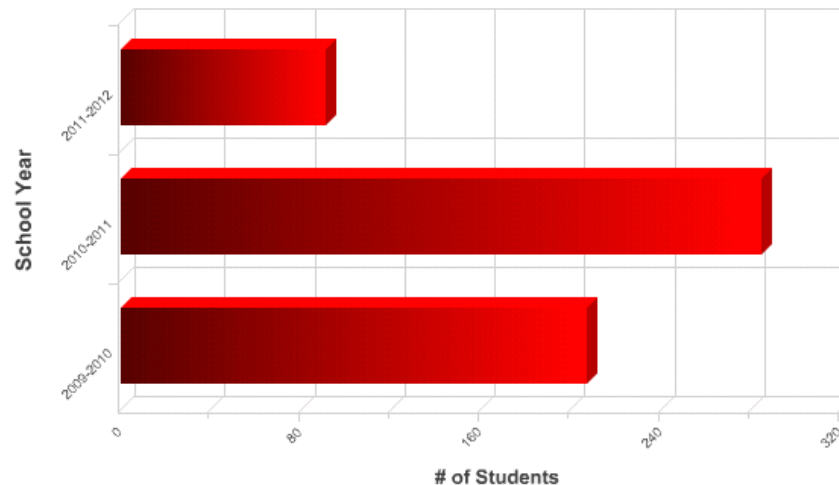
EWS - Academics Indicator

Page Options ▾

School Year  School  School Type  Guidance Counselor  Grade Level  Multi-Grade Level  Student ID  Student Name (LName, FName)

[EWS - Mobility Original](#)

Mobility Indicator 1 - Students With 3 Or More Enrollments



School Year	Student ID	Student Name	Total # of Enrollment Transactions	Guidance Counselor	# of Enrollments (Non Program/Grade Change)	Met Indicator 1 Criteria	Mobility Indicator Total
2011-2012			3		3	True	100.00%
2011-2012			3		3	True	100.00%
2011-2012			3		3	True	100.00%



## Mobility Reports & Dashboard - drilldown

### Mobility Indicator Drilldown Report

School Year	# of Moves / Enrollments	Student ID	Student Name	School	Grade	Enroll Start Date	Enrollment Type	Enroll Code	Enroll End Date	Exit Code	Comment
2011-2012	3			Santa Ana High School	10	08/24/2011	Leave	L	09/30/2011	160	Moved - Verified in other CA Public Scho
	3			Valley High School	10	10/13/2011	Leave	L	10/17/2011	167	Alt Ed or Ind Stdy Transfer
	3			Valley High School	10	10/18/2011	Enroll	E			
2010-2011	2			Community Day Intermediate School	8	07/13/2010	Leave	L	01/28/2011	16	Moved - Verified in other CA Public Scho
	2			Community Day High School	9	02/01/2011	Leave	L	06/20/2011	16	Moved - Verified in other CA Public Scho
2009-2010	1			Carr Intermediate School	8	08/31/2009	Leave	L	06/11/2010	16	Moved - Verified in other CA Public Scho

[Return](#) - [Refresh](#) - [Print](#) - [Download](#) - [Create Bookmark Link](#)

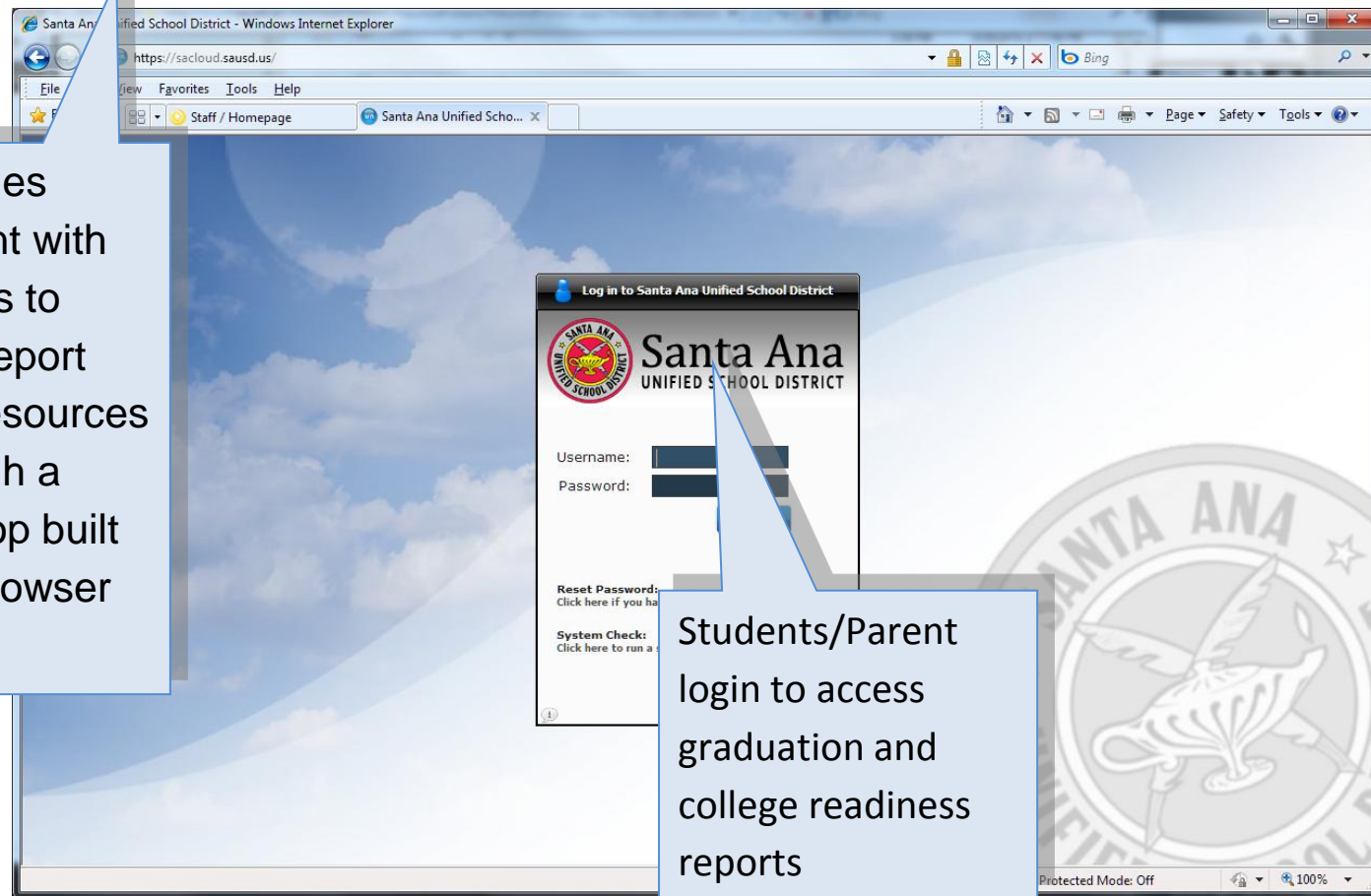
Enrollment Codes,  
Enrollment Start Dates and  
District-Defined Entry  
Enrollment Comments.

Exit Codes, Enrollment  
End Dates and District-  
Defined Exit Enrollment  
Comments.



## Next Steps: Cloud Reports for Students

Provides  
student with  
access to  
data report  
and resources  
through a  
desktop built  
in a browser



Students/Parent  
login to access  
graduation and  
college readiness  
reports





## Next Steps: Cloud Reports for Students



To get to the report, click on the WN cloud box in the lower left and go to Start > Reports >

Select the Graduation Flowchart and Educational Options - Admin



## Next Steps: Cloud Reports for Students

